

STUDIES ON OPISINA ARENOSELLA WALKER AND ITS
NATURAL ENEMIES IN SRI LANKA.

ABSTRACT

Opisina arenosella Walker (= Nephantis serinopa Meyrick) (Lepidoptera: Oecophoridae), is an insect defoliator recorded as an important pest of coconut in Sri Lanka, India, Burma and Pakistan. In Sri Lanka pest occurrence is restricted to some areas where infestations occur. It is controlled normally by a complex of larval and pupal parasitoids and predators. The population dynamics of O. arenosella and its parasitoids have not been studied and are therefore undertaken.

The distribution of O. arenosella life stages within a palm, evaluated through a randomised experiment, revealed maximum representation in the 12 to 14 leaf range - adapted for regular sampling.

Sampling at weekly, monthly and bimonthly intervals were carried out at six selected sites distributed in different geographic and climatic areas.

Time series analysis of the census data revealed the presence of cycles in population size at regular 2, 6 and 12-monthly intervals. The two-monthly cycles were of low amplitude and identified as generation cycles. The six and twelve-monthly cycles were of high amplitude giving rise to outbreaks and found to be positively correlated with minimum temperature. A significant correlation of minimum temperature with parasitoid numbers in the infested sites was also found.

The census data were also analysed using a combination of Richards-Waloff-Dempster and Kobayashi techniques and revealed the major mortality as being on the first instar larvae. This mortality was positively correlated with rainfall.

The use of natural enemies, insecticides and cultural techniques in the integrated management of the coconut caterpillar, are reviewed in the light of the above studies.

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